

DEPARTMENT OF TRANSPORTATION STUDENT ENGINEER JOB DUTIES

The responsibilities listed below are an example of duties that may be performed in a regional or central office location. Interns may be assigned some or all of the duties listed below. It is also possible that, based on operational needs, other duties, in addition to the duties listed below could be added to any position description.

The SET classification title encompasses limited term employment (LTE) positions which devote the majority of their time and are responsible for technical and engineering support duties related to the functions of the multi-modal transportation systems, in such areas as project development, technical services, systems planning and operations and related programs. The UWIP positions share the same responsibilities for performing technical and engineering support duties.

PROJECT DEVELOPMENT:

- Work as a member of DOT staff for the field administration of construction projects.
- Perform routine tests on materials in field laboratory.
- Observe material production and maintain production records.
- Responsible for keeping clear and accurate inspection diary records.
- Perform simple, repetitive computations.
- Perform or check more complex computations.
- Assist in the inspection of asphalt and concrete paving.
- Inspect various construction operations, such as grading and storm sewer inspections.
- Monitor and inventory traffic control devices.
- Inspect curb and gutter, storm sewer, and culvert installation.
- Monitor and inspect scales, ready-mix plants and aggregate production plants.
- Operate level and transit; hold rod, range pole or prism and hold rear end of chain or reading tape when cross-sectioning. Assist in measuring various items for payment to contractors.
- Work as a member of a staking crew.
- Calculate alignments and trigonometric problems, use of computers for roadway designs, hydraulic analysis, engineering estimates, and developing contract documents.
- Compute and check quantities.
- Assist in assembling Plans, Specifications & Estimates (PS&E).
- Compute and check drainage studies.
- Compute and check plan sheets.
- Assist in the development of roadway alignments and profiles.
- Prepare and check roadway cross sections.
- Prepare construction detail drawings.
- Inspect bridge and box culvert construction.

TECHNICAL SERVICES:

Assist Survey Crew Chief in design data collection utilizing state-of-the-art survey equipment for transportation facilities.

- Leveling surveys
- Topographic surveys
- Utility surveys
- Structure surveys
- Aerial Mapping checks
- Digital Terrain Models

- Borrow Pits, quantity calculations R/W Plat interpretation

Assist Lab Manager in performing materials testing on soil, aggregate, asphalt and concrete materials used on transportation construction projects.

- Gradation testing/Sieve Analysis
- Concrete compressive testing
- Asphalt void testing/Gyratory Compaction Testing
- Concrete Mix design
- Asphalt AC content/Extraction testing
- Plant Inspections
- Proctor tests
- Pavement Evaluation

SYSTEMS PLANNING & OPERATIONS:

- Assist in performing bridge inspections, including conducting bridge deck delaminating studies and underwater streambed graphing.
- Assist in developing bridge repair plans.
- Assist in developing traffic related plans.
- Conduct traffic studies, including radar speed checks and accident analysis.
- Perform fieldwork relating to structures by assisting in survey work for plan preparation and providing inspection on bridge rehabilitation projects.
- Assist in performing utility inspections, including inspecting utility permit compliance to State Utility Standards.
- Assist in construction inspection of cost reimbursement contract projects. This work will consist of construction survey, collection of materials for testing and reporting on progress.
- Assist in organization of data including conversion of paper data to digital data.
- Work includes building directory structures and operation of large format scanner.
- Assist in surveillance of state trunk highway system, reporting any safety hazards to area maintenance engineer.